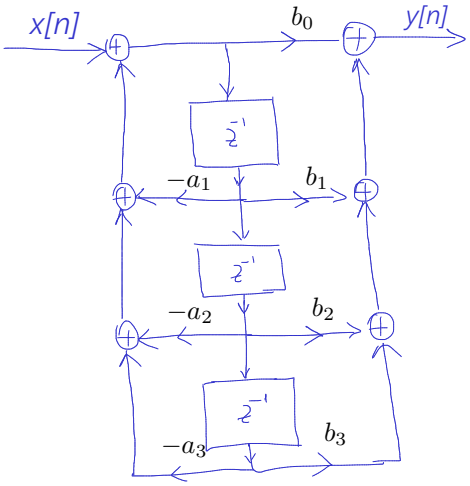


*Direct Form 2, order 3*

*Find the state-space equations (type I) from the direct form II implementation:*

*State-space equations, type I*

$$y[n] = [\quad]\cdot\begin{bmatrix} v_1[n] \\ v_2[n] \\ v_3[n] \end{bmatrix} + \underline{\quad}\cdot x[n]$$

q — d — v[n]

$$\begin{bmatrix} v_1[n] \\ v_2[n] \\ v_3[n] \end{bmatrix} = \begin{bmatrix} \quad \end{bmatrix}\cdot\begin{bmatrix} v_1[n] \\ v_2[n] \\ v_3[n] \end{bmatrix} + \begin{bmatrix} \quad \end{bmatrix}\cdot x[n]$$

F — v[n] — g